UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/723,448 | 11/25/2003 | Astrid Elbe | S0193.0010 | 5966 |

38881 7590 12/11/2006

DICKSTEIN SHAPIRO LLP
1177 AVENUE OF THE AMERICAS 6TH AVENUE
NEW YORK, NY 10036-2714

| EXAMINER | |
|---|---|
| PAN, DANIEL H | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2183 | |

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/723,448 | ELBE ET AL. | |
| | Examiner | Art Unit | |
| | Daniel Pan | 2183 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *28 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on *25 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/28/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Claims 1-14 remain for examination. New references have been introduced in response to the newly added claims 15,16 : Storngin et al. (6,862,641) of Davis (5,818,939). However, response to applicants remarks will be included in this action below.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Connor et al. (6,026,485) in view of Davis (5,818,939) .

3. As to claim 15, O'Connor taught :

a) an arithmetic unit for processing operands (see integer and floating point units in fig.1),

b) a register memory for storing operands (see fig.4B for the background of the memory space, see fig.8, [stack memory];

c) a register memory configuration unit (see fig.4C stack management unit) designed to configure the register memory such that memory space in the register memory is assigned to operands (see detail of operand memory stack region in fig.8, [812][813]) and that memory space in the register memory that is not assigned to operands is made

available for other data than the operands (see the constant pool [814] of local variables space in fig.8, see also fig.11 for the operands to the execution unit).

4. O'Connor taught at least part of the memory was mapped to a physical working memory (see register pointers 822 in col.20, lines 22-39). O'Connor did not specifically show the cryptocoprocessor nor the volatile memory as claimed . However, Davis taught a volatile memory and the cryptocoprocessor (see fig.4 [615 volatile memory] [Cryptoprocessor] ). It would have been obvious to one of ordinary skill in the art to use Davis in ). It would have been obvious to provide a volatile working memory and the cryptocoprocessor as claimed because the use of Davis could provide a separate secured access to the memory system of O'Connor, and because O'Connor also taught encryption (col.2, lines 49-57), which was a suggestion of the need for providing a volatile memory and the cryptocoprocessor in order to maintain the restricted access to the memory by the processor, and for the above reasons, provided a motivation.

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boettner et al. (4,777,589) in view of Storngin et al. (6,862,641) in view of Davis (5,818,939).

6. As to claim 16, Boettner taught at least :

a)a host CPU (see system CPU in fig.1 [CPU]);

b) a peripheral device connected to the host CPU via an external bus

comprising an internal memory (see fig.1 [peripheral I/O]; and

c) a memory configuration unit, the memory configuration unit being designed to make space from the internal memory available for the peripheral device as needed (see memory mapped 1/0 in col. 1, lines 19-37, the privileged memory page in col.2, lines 8-41), and to make space from the internal memory not being made available to the peripheral device available for other data by access via an external bus (see unprivileged page in col.2, lines 8-41);

7. Boettner did not specifically show the register memory is mapped into the external working memory, and to address the register memory space not assigned to operands in the same way as the external working memory as clamed. However, Storngin taught a register memory [610A] mapped to an external memory (see fig.7A [355][550], see also fig.8 for the combined [355] and [555], see fig.8A [610C], fig.8B 610D) see also the addressing mapping in col. lines 16-35). It would have been obvious to one of ordinary skill inn the art to use Storngin in Boettner for including the register memory mapping external memory as claimed because the use of Storngin could provide Boettner the ability to adapt to additional memory connection , thereby expanding the system connectivity, and because Boettner also taught additional attributes of the virtual memory were used to map the I/O devices (see col.2, lines 66-68, col.3, lines 1-6), which was a suggestion of the need for providing the external working memory (e.g. the memory I/O) in order to map to the additional subsystem, in doing so, provided a motivation.

Neither Boettner nor Storngin taught the volatile memory as claimed. However, Davis taught a volatile memory in an cryptographic system provide (see fig.4 [615 volatile] ). It would have been obvious use to Davis to provide a volatile working memory as claimed because the use of Davis could provide separate secured access to the memory system, and because Boettner did show concern for system protection, which provided a suggestion for crypto processing , or the like (see col.6, lines 31-36).

8. Claims 1, 2,4-8 are rejected under 35 U.S.C. 102(b) as being anticipated by O'Connor et al. (6,026,485).

9. As to the newly amended claim 1, the change of other data than the operands to data other than operands is directed to the form of language not affecting the scope.

10. Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over O'Connor et al. (6,026,485) Hadad (6,185,596).

11. Claims 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Boettner et al. (4,777,589).

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boettner et al. (4,777,589) in view of Cunningham et al. (5,659,680).

13. Claims 13,14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boettner et al. (4,777,589) in view of O'Connor et al. (6,026,485).

14. The rejections are maintained and incorporated by reference the last Office action on 08/09/06.

15. The response filed on 09/28/06 has been fully considered but is not persuasive.

16. In the remarks, applicant argued that :

a) while the stack management unit is used to fill the memory 810, there are predefined constant locations;

b) Boettner does not disclose that memory was configurable as needed.

17. As to a) above, applicant is reminded that unclaimed features cannot be used to overcome the prior art (e.g. see CCPA In re Lundenberg & Zuschlag, 113, USPQ 530, 534 (1957)). For example, nowhere does applicant claim recite non- constant or constant locations. And, even if O'Connor was directed to predefined constant locations, it should have saved or restored the data at different locations based on its availability within the predefined constant locations.

18. As to b), Boettner taught memory mapped I/O, certain addresses were reserved for each I/O device (see col.3, lines 1-6), and hashed the virtual address to produce the physical addresses (se col.3, lines 64-68, col.4, lines 1-9). Therefore, the addresses were configurable for the I/O devices as needed within the virtual map.

Applicant's amendment (new claims 15,16) necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Pan whose telephone number is 571 272 4172. The examiner can normally be reached on M-F from 8:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan, can be reached on 571 272 4162. The fax phone number for the organization where this application or proceeding is assigned is 703 306 5404.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).